

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1.-26. (cancelled)

27. (new) A catalyst comprising nickel, silica, alumina and magnesium, wherein the nickel to silicon atomic ratio is 2 to 30, the nickel to aluminum atomic ratio is 9 to 40, and the nickel to magnesium atomic ratio is 5-75, said catalyst having an average particle size of about 1 to about 20 μm .

28. (new) The catalyst according to claim 27, having an average particle size of about 3 to about 8 μm .

29. (new) The catalyst according to claim 27, wherein the nickel to silicon atomic ratio is at least 6.5, preferably 6.5 to about 22, more preferably 6.5 to about 15.

30. (new) The catalyst according to claim 27, wherein the nickel to aluminum atomic ratio is about 10-35, preferably about 15 to about 22.

31. (new) The catalyst according to claim 27, wherein the nickel to magnesium atomic ratio is about 5-50, preferably about 6 to about 20.

32. (new) A method for preparing the catalyst according to claim 27, wherein a nickel source; a silica source, an alumina source and a magnesium source are mixed in a liquid and co-precipitated therefrom to form a catalyst precursor,

the catalyst precursor is isolated from the solution, and
the catalyst precursor is activated to form the catalyst, the activation preferably comprising a reduction of at least part of the nickel content of the catalyst precursor, and optionally calcining the catalyst precursor before being reduced.

33. (new) A process for hydrogenating an unsaturated organic compound, wherein the unsaturated organic compound is contacted with hydrogen in the presence of the catalyst according to claim 27.

34. (new) A catalyst comprising nickel, silica, alumina and magnesium, wherein the nickel to silicon atomic ratio is 2 to 30, the nickel to aluminum atomic ratio is 9 to 40, and the nickel to magnesium atomic ratio is 5-75, and the nickel surface area is at least 75 m²/g of nickel, and wherein the catalyst is coated with a protective layer, effective in preventing oxidation of the catalyst.

35. (new) The catalyst according to claim 34, having an average particle size of about 3 to about 8 μ m.

36. (new) The catalyst according to claim 34, wherein the nickel to silicon atomic ratio is at least 6.5, preferably 6.5 to about 22, more preferably 6.5 to about 15.

37. (new) The catalyst according to claim 34, wherein the nickel to aluminum atomic ratio is about 10-35, preferably about 15 to about 22.

38. (new) The catalyst according to claim 34, wherein the nickel to magnesium atomic ratio is about 5-50, preferably about 6 to about 20.

39. (new) A method for preparing the catalyst according to claim 34, wherein

a nickel source, a silica source, an alumina source and a magnesium source are mixed in a liquid and co-precipitated therefrom to form a catalyst precursor, the catalyst precursor is isolated from the solution, and the catalyst precursor is activated to form the catalyst, the activation preferably comprising a reduction of at least part of the nickel content of the catalyst precursor, and optionally calcining the catalyst precursor before being reduced.

40. (new) A process for hydrogenating an unsaturated organic compound, wherein the unsaturated organic compound is contacted with hydrogen in the presence of the catalyst according to claim 34.

41. (new) A process for hydrogenating an unsaturated fatty substance comprising contacting the unsaturated fatty substance with hydrogen in the presence of a catalyst comprising nickel, silica, alumina and magnesium, wherein the nickel to silicon atomic ratio is 2 to 30, the nickel to aluminum atomic ratio is 9 to 40, and the nickel to magnesium atomic ratio is 5-75.

42. (new) The process according to claim 41, wherein the unsaturated fatty substance is a contaminated oil, a clean oil or a combination thereof.